

REMARKS

This application has been reviewed in light of the Office Action mailed on June 16, 2003. Claims 1-3 are pending in the application with Claim 1 being in independent form. By means of the present amendment, Claim 1 has been amended.

Claim 1 was rejected under 35 U.S.C. §112, first paragraph, because the specification, while being enabling for the trivalent element yttrium, does not provide enablement for the trivalent element selected from the lanthanides, lanthanum and scandium. Claim 1 has been amended in a manner which is believed to overcome the rejection. Particularly, Claim 1 has been amended to recite, inter alia:

the inner surface (4) of the discharge vessel (1) is coated with a non-luminescent film (6) which counteracts transport of mercury from the filling to the wall (3) of the discharge vessel (1) and of alkali ions from the wall (3) of the discharge vessel (1) to the filling,

wherein the non-luminescent film (6) comprises at least a compound selected from the trifluorides and oxyfluorides of yttrium.
[Emphasis Added]

Claim 1, as amended, recites that the non-luminescent film coating is comprised of a compound selected from the trifluorides and oxyfluorides of yttrium. As acknowledged by the Examiner at page 2 of the Office Action, the specification is enabling for the trivalent element being yttrium. Claim 1, as amended, no longer recites that the trivalent element is selected from lanthanides, lanthanum and scandium. It is respectfully submitted that by removing any reference in Claim 1 to lanthanides, lanthanum and scandium, the 112 rejection is overcome.

Applicants acknowledge, however, that the re-introduction of yttrium to Claim 1 is prima-facia rejectionable under 35 U.S.C. §102(b) as raised in the previous Office Action of November 26, 2002. In particular, in the previous Office Action, Claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,391,959 issued to Labib et al. In the previous Office Action, the Examiner asserted that Labib discloses an inner surface coated with a film which comprises at least a compound selected from yttriumoxyfluoride and yttriumtitanate. (See Labib at Col. 3, lines 9+).

The 102 rejection is believed overcome by additional distinguishing recitation in Claim 1. In particular, Claim 1 now recites that the film coating (6) is a non-luminescent film coating which serves solely to counteract the transport of mercury from the filling to the wall (3) of the discharge vessel (1) and of alkali ions from the wall (3) of the discharge vessel (1) to the filling, as recited in Claim 1.

The specification clearly discloses at page 2, line 32 through page 3, line 15 that in the low-pressure mercury vapor discharge lamp of the invention, the non-luminescent film coating, on a side facing the discharge space, is then coated with a luminescent material that is resistant to water and anionic surface-active substances. The disclosure of a non-luminescent film coating coated with a luminescent material finds further support in the specification at col. 4, lines 8-14, where it is stated:

For this purpose, the inner surface 4 is coated with a film 6 which at least comprises a compound selected from the group formed by trifluorides and oxyfluorides of an at most trivalent element selected from lanthanides, lanthanum, scandium and yttrium.

In the case of the lamp shown, the wall 3 is provided, on a side of the film 6 facing the discharge space 2, with a coating 7 comprising luminescent

material: Y_2O_3 activated with Eu^{III} (YOX), cerium-magnesium-aluminate activated with Tb (CAT) and barium-magnesium-aluminate activated with Eu^{II} (BAM). [Emphasis Added]

Still further support for a non-luminescent coating coated with a luminescent coating may be found in Claim 2, which recites:

2. A low-pressure mercury vapor discharge lamp as claimed in claim 1, characterized in that the wall (3) is provided, on a side of the film (6) facing the discharge space (2), with a coating (7) comprising a luminescent material. [Emphasis Added]

By contrast, there is no teaching or disclosure in Labib of a non-luminescent coating. Rather, Labib only discloses or suggests a luminescent coating layer. In particular, the yttrium containing phosphors which coat the inner surface of the fluorescent lamp of Labib serve as a luminescent coating layer.

The luminescent coating layer of Labib disclosed in Labib is analogous to the luminescent material of the instant invention, e.g., Y_2O_3 activated with Eu^{III} (YOX) and is not analogous to the non-luminescent film coating comprised of at least a compound selected from the trifluorides and oxyfluorides of yttrium.

As a further distinction, Applicants respectfully point out that Labib discloses at Col. 3, lines 4-12 that *yttrium-containing phosphors are treated with ammonium hydrogen difluoride and ammonium dihydrogen phosphate*. In Labib, it is desirable to treat the yttrium-containing phosphors with ammonium hydrogen difluoride and ammonium dihydrogen phosphate to overcome a drawback of the prior art. Specifically, Labib is directed to surface treating yttrium containing phosphors to render them stable in aqueous slurries. Labib discloses the drawback of the prior art for which the surface treating is intended to overcome at Col. 1, line 68 through Col. 2, line 10:

Yttrium-containing phosphors and mixtures of phosphors can be applied from a non-aqueous slurry, for example based on a nitrocellulose binder, in organic solvents such as butyl acetate, which provides stable phosphor slurries. However, the use of organic solvents is expensive, creates fire hazards and is subject to strict environmental regulation as well, and it would be highly desirable to substitute aqueous slurries in place of the

organic solvent slurries. However, aqueous phosphor slurries that contain yttrium-containing phosphors sometimes prove unstable; they can exhibit poor chemical stability and poor coating appearance. Particularly in the presence of polymeric binders that contain reactive chemical groups, such as hydroxyl and carboxyl groups, e.g., polyacrylic acid, the slurries form a non-pourable gel within a few days. These gels cannot be reconstituted, and thus the phosphor must be reclaimed laboriously. When these aqueous phosphor/binder compositions are used as coatings in fluorescent lamps, severe flocculation of the phosphor can also occur, resulting in objectionable appearance defects in the coated lamps.

Thus, there is no teaching or disclosure of coating (treating) the inner surface of the discharge vessel with a non-luminescent film of a compound *compound* selected from the trifluorides and oxyfluorides of yttrium which counteracts transport of mercury from the filling to the wall of the discharge vessel and of alkali ions from the wall of the discharge vessel to the filling, as recited in Claim 1.

It is therefore respectfully submitted that Claim 1 now recites limitations and/or features, as a whole, which are not disclosed or suggested by Labib et al and should overcome any prima-facia rejection under 35 U.S.C. §102(b).

Applicants further respectfully submit that Claim 1, as amended hereinabove, overcomes the instant rejection under 35 U.S.C. §112, first paragraph. Accordingly, applicants respectfully request that the rejection under 35 U.S.C. §112, first paragraph with respect to Claim 1 and allowance thereof is respectfully requested.

Additionally, Claim 2 depends from independent Claim 1 and therefore contains the limitations of Claim 1. Hence, for at least the same reasons given for Claim 1, Claims 2 is believed to be allowable over Labib et al. Accordingly, withdrawal of the rejection under 35 U.S.C. §102(b) with respect to Claims 2 and allowance thereof is respectfully requested.

Claim 3 was rejected under 35 U.S.C. §112, first paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In view of the foregoing amendments and remarks, it is respectfully submitted that all claims presently pending in the application, namely, Claims 1-3, are believed to be in condition for allowance and patentably distinguishable over the art of record.

If the Examiner should have any questions concerning this communication or feels that an interview would be helpful, the Examiner is requested to call Frank Keegan, Esq., Intellectual Property Counsel, Philips Electronics North America Corp., at 914-333-9669.

Respectfully submitted,

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